

Non-Fungible Tokens as Jurisdictionless Innovation: Legal Vacuum, Loopholes, Potentials and Solutions

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ABSTRACT

Non-Fungible Tokens (NFTs) are one of the technological innovations that provide convenience for every human being, especially in the context of business and economic opportunities. Features such as anonymity, decentralization, and its online scope are undeniably a double-edged knife phenomenon. On the one hand, it makes things easier, but on the other hand, it has the potential to become a platform for criminal acts such as money laundering, personal data violations, and copyright plagiarism. So that the urgency of special regulations should be considered, but with a progressive nature and paradigm so that NFT innovation does not die just because the law does not adjust to the times. Progressive law is a solution and answer to the phenomena that occur, where the legal paradigm and its enforcement must be in accordance with the moral system, the times, and the values that live in society to achieve substantive justice. Practical breakthroughs such as utilizing the latest technology can be developed to assist the law enforcement process in cyberspace.

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PRELIMINARY

Dichotomized by the rapid advancement of technology and economic disruption as a result of the Covid-19 pandemic, creating rationality of human instinct to emerge and seek for a new fields of livelihood to survive in this fully-challenging era. The era of disruption as a result of digitalization is one of the things that causes intense competition in human life, especially in terms of livelihood.¹ For example, printed media such as newspapers and magazines are currently becoming less desirable due to the rapid advancement of

¹ Lasmawan, I. W. (2019). Era Disrupsi Dan Implikasinya Bagi Reposisi Makna Dan Praktek Pendidikan (Kaji Petik Dalam Perspektif Elektik Sosial Analisis). *Jurnal Media Komunikasi Pendidikan Pancasila dan Kewarganegaraan*, 1(1), 54-65., hlm. 58.

technology. Most people prefer the internet as a way to get information.² This is also inseparable from the idea of the industrial revolution 4.0. The idea is an ideal of accelerating changes in industrialization in order to obtain a commercial added value with the use of machine technology as a substitute for some human jobs.³ It is undeniable that the innovations born from the idea of the industrial revolution 4.0 will change most fields of human life-reality to be more efficient either on a large scale such as industry and on a small scale like daily human life. For instance, artificial intelligence as one of the innovations coming from the idea of industrial revolution 4.0 is able to provide effectiveness for the industrial world and human needs.⁴ Artificial intelligence is a rudderless crew that can duplicate the cognitive functions of the general human mind with a computational approach so that it could make a rational, flexible, and even unpredictable decisions.⁵ The contribution of artificial intelligence has a major influence on the industrial world and daily human life, things such as personal data security systems, disaster prevention and mitigation, climate, even to the health industry, as his current massive contribution to the development of the Covid-19 vaccine.⁶

Next up is Internet of Things (IoT) innovation, is one of the masterpieces invented from the industrial revolution 4.0. It generated from a radio frequency mechanism and by its design is one of the easiest to deploy on a large scale. IoT consists of various devices with embedded systems that are connected to each other in a telecommunications network. The mechanism is able to create, generate, transmit and as well as a decision maker for information automatically without any direct human intervention, so it's a highly independent tech. The massive development of IoT shows that it has almost no limitations, because of its domain and scope that could be used in various and specific fields such as economics, medicine, and even in the household scope.⁷ In terms of effectiveness, these innovations could create convenience for human life, but in the other hand, those also could pose a dilemma as well for human civilization considering the shrinking land and reduced opportunities for humans because some fields of work are taken over by the machines, robots, and the advanced technologies. The dilemma also felt by the government considering that the constitutional order explicitly guarantees every citizen's right to a job and a livelihood that is worthy of humanity.⁸ Moreover, the impact from the phenomena and field situation after the Covid-19 pandemic has resulted in most people losing their jobs. Data recorded by the Ministry of Manpower (Kementerian Ketenagakerjaan) noted that throughout 2021, as many as 72,983 Indonesian workers experienced termination of employment due to the Covid-19 pandemic.⁹

One of the major innovations that was also born from the idea of the industrial revolution 4.0 is called Blockchain. Blockchain is a decentralized innovation that allows anyone-anywhere to easily carry out business transaction activities such as supply chain

² Romadhoni, B. A. (2018). Meredupnya Media Cetak, Dampak Kemajuan Teknologi Informasi. *An-Nida: Jurnal Komunikasi Islam*, 10(1), 14-20., hlm. 15.

³ Disemadi, H. S. (2021). Urgensi regulasi khusus dan pemanfaatan artificial intelligence dalam mewujudkan perlindungan data pribadi di Indonesia. *Jurnal Wawasan Yuridika*, 5(2), 177-199., hlm. 178.

⁴ Yudoprakoso, P. W. (2019). Kecerdasan Buatan (Artificial Intelligence) Sebagai Alat Bantu Proses Penyusunan Undang-Undang Dalam Upaya Menghadapi Revolusi Industri 4.0 Di Indonesia. *Simposium Hukum Indonesia*, 1(1), 450-461., hlm. 457.

⁵ Raza, E., & Komala, A. L. (2020). Manfaat dan Dampak Digitalisasi Logistik di Era Industri 4.0. *Jurnal Logistik Indonesia*, 4(1), 49-63., hlm. 54.

⁶ Disemadi, H. S. (2021), Op. Cit., hlm. 193.

⁷ Wójcicki, K., Biegańska, M., Paliwoda, B., & Górna, J. (2022). Internet of Things in Industry: Research Profiling, Application, Challenges and Opportunities—A Review. *Energies*, 15(5), 1-24., hlm. 4.

⁸ Pasal 27 ayat (2) Undang-Undang Dasar Negara Republik Indonesia

⁹ Putra, D.A. (2021). *Survei Kemnaker: 72.983 Pekerja Terkena PHK di 4.156 Perusahaan Imbas Pandemi*, <https://www.merdeka.com/uang/survei-kemnaker-72983-pekerja-terkena-phk-di-4156-perusahaan-imbaspandemi.html>. Diakses 1 Juni 2022.

automation, record keeping, smart contracts, and payments.¹⁰ Blockchain's decentralized system is an added value that could be utilized by everyone to make transactions safely and reliably without the intermediary-intervention of third parties such as banks.¹¹ Its computing technology can create a sturdy, transparent, secure and very difficult to change transaction data storage and a strong guarantee against potential manipulation that makes Blockchain can mitigate the occurrence of duplicate transactions.¹² Currently, Blockchain has penetrated into every aspect of the human life referring to the data reported by the European Union Commission entitled "Blockchain Now And Tomorrow: Assessing Multidimensional Impacts of Distributed Ledger Technologies", as many as 600 financial sector companies and 200 consumer service sector companies, as well as companies from other sectors such as health, energy and industry have transformed by using Blockchain technology to support their business activities.¹³

Technology that can simultaneously accommodate to drive millions of transactions from various applications makes Blockchain an innovation that can be utilized by other innovations such as Non-Fungible Tokens (NFT).¹⁴ NFTs are a part of the Blockchain that facilitates the sale of cryptoart or digital artworks by linking a certified permanent online record of the artwork with its owner.¹⁵ The main objects and subjects in NFT activities are artworks and its artists, of course, two things that have been protected by our constitution and positive laws in Indonesia as well. In addition, there is another important component that is also a crucial tool in NFT activities, namely personal data. Philosophically, everyone, including those who are artists, is clearly entitled to legal certainty¹⁶ and its protection of personal identity and security from threats of fear to do or not do something.¹⁷ And juridically, legislation legitimizes the recognition of exclusive rights for an artists¹⁸ as well as various legal instruments that partially provide protection for personal data, such as the Law on Banking, Electronic Information and Transactions, Human Rights, Consumer Protection, Telecommunications and even the Law on Health.¹⁹ Unfortunately, the field's phenomenon nowadays actually shows something contradictory as the reality of technological progress which undeniably does not only have a positive impact.²⁰ As a case of human rights violations in the NFT space in Indonesia is the sale of personal data in the form of physical photos experienced by the chancellor of the Bandung Institute of Technology.²¹ Where it is without the consent, permission and understanding of the personal data owner and prohibited by the law as well. Although cases of infringement have not occurred frequently in Indonesia, the international world has often experienced various acts of infringement as a result of the NFT. An investigation by Vice International found a group of artists disputing the ownership of their personal data, with anonymous accounts selling their

¹⁰ Javaid, M., Haleem, A., Singh, R. P., Khan, S., & Suman, R. (2021). Blockchain technology applications for Industry 4.0: A literature-based review. *Blockchain: Research and Applications*, 2(4), 1-29., hlm. 3.

¹¹ Aini, Q., Rahardja, U., Santoso, N. P. L., Harahap, E. P. P., & Amelia, S. Strategi Konsep Gamifikasi dalam Aplikasi Teknologi Blockchain. *JEPIN (Jurnal Edukasi dan Penelitian Informatika)*, 7(2), 219-225., hlm. 222.

¹² Lase, S. M. N., Adinda, A., & Yuliantika, R. D. (2021). Kerangka Hukum Teknologi Blockchain berdasarkan Hukum Siber di Indonesia. *Padjadjaran Law Review*, 9(1), 1-20., hlm. 3.

¹³ *Ibid.*

¹⁴ Vasan, K., Janosov, M., & Barabási, A. L. (2022). Quantifying NFT-driven networks in crypto art. *Scientific reports*, 12(1), 1-11., hlm. 1.

¹⁵ *Ibid.* Lihat juga Lim, H. W., & Wibowo, T. (2022, April). Cryptocurrency Mining Effects Analysis On Semiconductor Shortage On Pc Owner Community. In *CoMBInES-Conference on Management, Business, Innovation, Education and Social Sciences* (Vol. 2, No. 1, pp. 324-331).

¹⁶ Pasal 28D Undang-Undang Dasar Negara Republik Indonesia Tahun 1945

¹⁷ Pasal 28G Undang-Undang Dasar Negara Republik Indonesia Tahun 1945

¹⁸ Pasal 4 Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta

¹⁹ Kusnadi, S. A. (2021). Perlindungan Hukum Data Pribadi Sebagai Hak Privasi. *AL WASATH Jurnal Ilmu Hukum*, 2(1), 9-16., hlm. 9.

²⁰ Widiatno, A., & Pratama, G. (2022). Cyberporn Dalam Pasar Digital Non-Fungible Tokens: Prespektif Undang-Undang Informasi Transaksi Elektronik Dan Pornografi. *Journal Justiciabelen (JJ)*, 2(2), 91-103., hlm. 93.

²¹ Kamaliah, A. (2021). *Ramai Kasus Foto Rektor ITB Dijual, Apa Itu NFT?*. <https://inet.detik.com/business/d-5807811/ramai-kasus-foto-rektor-itb-dijual-apa-itu-nft>, Diakses 31 Juli 2022.

work and digital art without the artists' permission and understanding.²² Then, an artist named Trier experienced art piracy after 37 of his paintings were sold without permission and understanding at the NFT marketplace.²³ Reflecting on the phenomenon of violations that have been experienced by the international community, this research was made to examine more deeply the potential loopholes of NFTs that can harm everyone, especially artists in Indonesia, and the solutions to its loopholes as well.

The point of difference and novelty of this research with other existing research is in the context and its focus, where this research focuses on legal gaps, loopholes, and NFTs potentials that can cause problems in the future and solutions to those problems by using a conceptual perspective. Thus, this research examines the problem of how positive law related to Non-Fungible Tokens (NFT) in Indonesia and analyzes the inventory of problems and ius constituendum solutions in the perspective of progressive law.

METHOD

This research uses a doctrinal research method with the application of several combined approaches, namely a statutory approach and a conceptual approach as well as a wide variety of secondary sources to support the substance, conceptions, premises, and opinions contained in this research. Doctrinal research method interpreted as a type of research that focuses on law in the normative scope, namely law at the level of theory, philosophy, principles, rules and norms to find out, review, and find solutions to legal phenomena such as norm vagueness, vacuum and legal conflicts.²⁴ Therefore, the context of the research is limited to literature study activities such as data collection, review of legislation, doctrine, jurisprudence and previous legal research.²⁵ The statutory approach is a legal research approach that focuses on positive legal references, mainly in this study used as a way to examine the entire hierarchy of laws and regulations related to copyright, cyber-crime, personal data, electronic transactions, and other positive laws directly related to NFTs. Meanwhile, the conceptual approach is used as a guideline to compare existing legal phenomena based on the existence of doctrines, opinions, and legal theories from experts. Meanwhile, to trace the sources of data in this study, the authors rely on secondary data in the form of legal materials such as laws and regulations also some previous published-research which are elaborated and critically analyzed.²⁶

RESULT AND DISCUSSION

1. Positive Law Related to Non-Fungible Tokens (NFT) in Indonesia

The NFT ecosystem consists of various infrastructures, features and stakeholders that later will affect its perspective of this study based on the use of *lex specialis* law. In this research, the study will focus on important stakeholders such as art creators (artists) and NFT owners (buyers), anonymity and smart contract features, as well as the infrastructure inherent in NFTs such as: the medium of exchange (currency); the concept of confidentiality; and decentralization.

One of the crucial stakeholders in the NFTs digital artwork activities is the creator. Generally, creators divide into two categories such as artist and creators itself. Artists are those who have a direct association in the process of creating works of art in accordance

²² Munster, B. (2021). *People Are Stealing Art and Turning It Into NFTs*. <https://www.vice.com/en/article/n7vxe7/people-are-stealing-art-and-turning-it-into-nfts>, Diakses 31 Juli 2022.

²³ Collier, K. (2022). *NFT art sales are booming. Just without some artists' permission*. <https://www.nbcnews.com/tech/security/nft-art-sales-are-booming-just-artists-permission-rcna10798>, Diakses 1 Agustus 2022.

²⁴ Nurhayati, Y., Ifrani, I., & Said, M. Y. (2021). Metodologi Normatif Dan Empiris Dalam Perspektif Ilmu Hukum. *Jurnal Penegakan Hukum Indonesia*, 2(1), 1-20., hlm. 8.

²⁵ Barus, Z. (2013). Analisis Filosofis Tentang Peta Konseptual Penelitian Hukum Normatif Dan Penelitian Hukum Sosiologis. *Jurnal Dinamika Hukum*, 13(2), 307-318., hlm. 309.

²⁶ Tan, D. (2021). Metode Penelitian Hukum: Mengupas Dan Mengulas Metodologi Dalam Menyelenggarakan Penelitian Hukum. *Nusantara: Jurnal Ilmu Pengetahuan Sosial*, 8(8), 2463-2478., hlm. 2472.

with their profession and then selling out their creations at the NFT, while the existence of creators is in another domain and stage, namely those who only aim to get funding from the sale of NFT products (e.g. sports, science, and comedy).²⁷ From a juridical perspective, artists are dominantly regulated in Law Number 28 of 2014 on Copyright (Copyright Law). Article 1 point 2 defines a creator as: "*a person or several persons who individually or collectively produce a work that is distinctive and personal*". From the phrasing of the article, it is clear and appropriate that NFT artists are referred to as Creators as stipulated in the Copyright Law.

Artists with their works are automatically given a legal umbrella in the form of exclusive rights as a symbolic award for creativity and innovation in order to trigger everyone to produce other works also in the context of national development.²⁸ Exclusive rights consist of moral rights in the form of a good name that is eternally attached to the creator and economic rights to enjoy all economic benefits from the creation.²⁹ In addition, the creator also has the right to prohibit any exploitation of the work to make, export-import, use, sell or distribute the work as long as no consent or permission given by it artist.³⁰ The license as an effort to expand economic rights for artist is clearly regulated in Article 80 of the Copyright Act, where copyright holders in a written agreement can grant licenses to other parties.

Similarly, in the context of NFTs, NFT artists could trade their digital art without fear of losing the rights described earlier. NFTs can track ownership, moral rights, and are programmed to earn royalties for original artist creator when their art is traded back to third parties.³¹ The purchaser of an NFT digital art could resell it but cannot positioning himself as the exclusive right holder such as commercialize its art, The purchaser may only publicize the digital art in the context of non-commercial personal use. So, the purchaser does not have the competence to exploit NFT's art and duplicate derivatives of the work.³² Purchaser only attached to the right of ownership, shaped like a deed, and used as a proof of ownership. The deed is used as a valid sign as an object of sale in the NFT marketplace.³³ It is consistently the same with the regulation of Article 80 paragraph (3) of the Copyright Law, that the granting of a license by the artist to the licensee must be accompanied by the obligation of the licensee to provide royalties to the artist. A license also does not necessarily negate the artist's copyright when granting licensing rights. In short, the copyright attached to the artist cannot be transferred in a license agreement.³⁴

Due to its online scope, it is imperative for NFT service providers to provide preventive mechanisms against potential copyright infringement in order to respect the rights of other artists either directly or indirectly involved in NFT activities. The correlation is related to the legal umbrella of copyright enforcement in Indonesia, which is related to the change in the mechanism of the criminal offense article into a complaint offense as stipulated in Article

²⁷ Baytaş, M. A., Cappellaro, A., & Fernaeus, Y. (2022). Stakeholders and Value in the NFT Ecosystem: Towards a Multi-disciplinary Understanding of the NFT Phenomenon. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts*, 211, 1-8., hlm. 3.

²⁸ Sulistianingsih, D., Adhi, Y. P., & Pujiono, P. (2021). Digitalisasi Kekayaan Intelektual Komunal di Indonesia: Digitalization of Communal Intellectual Property in Indonesia. In *Seminar Nasional Hukum Universitas Negeri Semarang*, 7(2), 645-656., hlm. 649.

²⁹ Sudirman, L., Guswandi, C. P., & Disemadi, H. S. (2021). Kajian Hukum Keterkaitan Hak Cipta Dengan Penggunaan Desain Grafis Milik Orang Lain Secara Gratis Di Indonesia. *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial*, 8(3), 207-218., hlm. 214.

³⁰ Disemadi, H. S., & Kang, C. (2021). Tantangan Penegakan Hukum Hak Kekayaan Intelektual dalam Pengembangan Ekonomi Kreatif di Era Revolusi Industri 4.0. *Jurnal Komunikasi Hukum (JKH)*, 7(1), 54-71., hlm. 60

³¹ Baytaş, M. A., Cappellaro, A., & Fernaeus, Y. (2022). Op. Cit., hlm. 4.

³² Sulistianingsih, D., & Kinanti, A. K. (2022). Hak Karya Cipta Non-Fungible Token (NFT) Dalam Sudut Pandang Hukum Hak Kekayaan Intelektual. *KRTHA BHAYANGKARA*, 16(1), 197-206., hlm. 201.

³³ Ibid., hlm. 202.

³⁴ Wardani, P. A. I. K., & Sukihana, I. A. (2021). Pengaturan Bentuk Dan Syarat Sahnya Perjanjian Lisensi Hak Cipta. *Kertha Semaya: Journal Ilmu Hukum*, 9(7), 1224-1234., hlm. 1231.

120 of the Copyright Law. So that it has implications for law enforcement efforts where a new copyright infringement can be processed after law enforcer gets a report or complaint of infringement from artists who feel harmed.³⁵ So that the existence of preventive mechanisms against potential copyright infringement can create conditions that facilitate respect for intellectual property rights. Otherwise, if there is no that such of mechanism, the enforcement and respect of intellectual property rights will be difficult to do considering the jurisdictional issue of NFT ³⁶ and also complaint offenses as described earlier.

The trading process of digital artworks on NFT marketplace is based on a contract or agreement called a smart contract. Smart contracts are one of the NFT features that bridge and simplify the digital art trading process especially used to reach an agreement, is a peace of code between two parties by utilizing the Blockchain network to bring together two special nodes in the form of terms and conditions without involving third parties such as notaries.³⁷ The concept of smart contracts utilizing Blockchain technology allows agreements to be made with computerized encryption connected to the user interface when implementing clauses.³⁸ As long as the agreement was made in accordance with the applicable civil law rules as stated in Article 1320 of the Civil Code, such as: *"1. There is an agreement between those who bind themselves; 2. Capacity of the parties; 3. A certain thing; dan 4. A lawful cause."*, then the principle of pacta sunt servanda automatically applies to the parties.

The process of making and implementing contracts within smart contract technology should maintain good faith between those who bind themselves, apart from all the processes that have been systematized by technological advances. This is because the rise of online-based contract violation cases can be seen from the massive enforcement of the excenoration clause, namely the existence of a standardized contract that has no room for the parties to negotiate the clauses, terms and conditions of the contract.³⁹ Reflecting on that, The regulation contained in Law No. 8 of 1999 on Consumer Protection ("UU PK") is one of the things that needs to be considered for NFT facilitators.. Article 18 paragraph (1) letter a of the UU PK states that: *"(1). Business actors in offering goods and/or services intended for trade are prohibited from making or including standard clauses in every document and/or agreement if: a. states the transfer of responsibility of the business actor"*. NFT smart contracts must pay a big attention to the fairness and balanced position of the parties and cannot be used as an "exit door" for NFT service providers to escape liability in the event of a dispute.⁴⁰

Furthermore, in the activity of buying and selling arts, NFT marketplaces such as OpenSea or Rarible use a currency called cryptocurrency as a medium of exchange, a cryptocurrency called Ethereum is used as a special payment instrument in the sale and purchase of digital art on NFTs.⁴¹ However, until now, the existence of cryptocurrency as a medium of exchange or legal currency is still strongly criticized by Bank Indonesia.⁴² That can be tolerated considering that the only legal tender in Indonesia is Rupiah⁴³, as stated in

³⁵ Wulan, E. R., & Kuswanto, H. (2020). Kajian Yuridis Pasal 120 Undang-Undang Hak Cipta Nomor 28 Tahun 2014 Tentang Delik Aduan Pada Pelanggaran Hak Cipta. *Lex Journal: Kajian Hukum & Keadilan*, 4(2), 151-170., hlm. 153.

³⁶ Wildan, A., Milah, M. S., Taufik, M., & Santika, T. (2022). Problematik Hukum Aset Digital Era Disrupsi 5.0 Di Indonesia Melalui Pendekatan Legislasi. *MAHUPAS: Mahasiswa Hukum Unpas*, 1(2), 67-88., hlm. 77.

³⁷ Utomo, T. P. (2021). Implementasi Teknologi Blockchain Di Perpustakaan: Peluang, Tantangan Dan Hambatan. *Buletin Perpustakaan*, 4(2), 173-200., hlm. 183.

³⁸ Sukmariningsih, R. M., Nurudin, A., & Nursanty, E. (2022). Pengenaan Hukum Pajak Pada Cryptocurrency Dan NFT Di Indonesia. *Owner: Riset dan Jurnal Akuntansi*, 6(2), 1644-1654., hlm. 1645.

³⁹ Manumpil, J. S. (2016). Klausula Eksonerasi Dalam Hukum Perlindungan Konsumen Di Indonesia. *Lex Privatum*, 4(3), 35-41., hlm. 39.

⁴⁰ Rizal, M. S., Yuliati, Y., & Hamidah, S. (2019). Perlindungan Hukum Atas Data Pribadi Bagi Konsumen Dalam Klausula Eksonerasi Transportasi Online. *Legality: Jurnal Ilmiah Hukum*, 27(1), 68-82., hlm. 75.

⁴¹ Ante, L. (2022). The non-fungible token (NFT) market and its relationship with Bitcoin and Ethereum. *FinTech*, 1(3), 216-224., hlm. 216.

⁴² Wildan, A., Milah, M. S., Taufik, M., & Santika, T. (2022). Op. Cit., hlm. 75.

⁴³ Pasal 1 angka 2 Undang-Undang Nomor 7 Tahun 2011 tentang Mata Uang

article 1 point 1 of Law Number 7 of 2011 on Currency that: "*Currency is money issued by the Unitary State of the Republic of Indonesia, hereinafter referred to as Rupiah*". Regardless, cryptocurrencies can still be used in Indonesia but not as legal tender but as an asset or commodity.⁴⁴ This is allegedly to maintain the stability of the rupiah over the influence of the existence of cryptocurrencies and also the condition of the rupiah which is still under the influence of the American dollar.⁴⁵ Article 1 of the Regulation of the Minister of Trade of the Republic of Indonesia Number 99 of 2018 concerning the General Policy for the Implementation of Crypto Asset Futures Trading states that: "*Crypto Asset is stipulated as a Commodity that can be made the Subject of Futures Contracts traded on the Futures Exchange*". Then article 2 continues that the supervision, guidance and development activities will be determined by the Commodity Futures Trading Supervisory Agency ("BAPPEBTI"). The existence of crypto assets as commodities is strengthened by BAPPEBTI in the Regulation of the Commodity Futures Trading Supervisory Agency Number 5 of 2019 concerning Technical Provisions for the Implementation of the Crypto Asset Physical Market on the Futures Exchange. ("Peraturan BAPPEBTI No 5/2019"). This means that crypto as an asset can be traded in Indonesia, but it cannot be implemented if it is positioned as a currency or legal tender.⁴⁶

The next study is related to the anonymity feature and the concept of confidentiality contained in the NFT platform. There is a considerable paradigm-gap regarding the concept of confidentiality contained in the NFT platform with the concept of confidentiality in accordance with positive law in Indonesia. The paradigm related to the concept of confidentiality contained in NFTs can be examined based on features such as immutable, transparency, and security. Immutable, meaning that once information or data is created and added to the Blockchain system, it is impossible to be changes and even deletions. Transparency, which allows every transaction activity to be seen by everyone in the Blockchain system and secure, namely decentralized storage of personal information and data in each computation authentically so that it is difficult to access and guaranteed security.⁴⁷ The anonymity feature is something offered by NFTs to each user to be able to create their own personal information and data without any checking or auditing mechanism, so that the manipulation of information on the Blockchain or NFT system is not always the original and correct information.⁴⁸ All of these features are in accordance with the ideals and desires of Blockchain, to changing the conventional financial institution system such as banks that must prioritize the Know-Your-Customer ("KYC") principle to recognize each customer.⁴⁹

All of these features that contained in the NFT as described above are contrary to what has been regulated in Indonesia's positive law. In the context of the use of personal data, the context and paradigm of confidentiality focuses on the aspect of use rather than anonymity. Apart from the Blockchain's features (immutable, secure, transparency, and anonymity) that are believed to be able to replace the checking and auditing mechanism on personal data information, in fact it's still vulnerable to data manipulation when personal data information is first registered into the system.⁵⁰ Sebaliknya, KYC principles in every banking emphasize the importance of recognizing each customer to know the identity or personal data

⁴⁴ Sularno, H. M., & Budiasih, E. S. (2022). Analisis Keabsahan Bitcoin Sebagai Mata Uang Virtual Menurut Perspektif Hukum Positif Di Indonesia. *Aliansi: Jurnal Manajemen dan Bisnis*, 17(1), 35-42., hlm 40.

⁴⁵ *Ibid*.

⁴⁶ Arbina, M., & Putuhena, M. I. F. (2022). Tata Kelola Pembentukan Regulasi Terkait Perdagangan Mata Uang Kripto (Cryptocurrency) Sebagai Aset Kripto (Crypto Asset). *Mahadi: Indonesia Journal of Law*, 1(1), 33-57., hlm. 38.

⁴⁷ Utomo, T. P. (2021). Op. Cit., hlm. 182.

⁴⁸ Chang, A. J., El-Rayes, N., & Shi, J. (2022). Blockchain Technology for Supply Chain Management: A Comprehensive Review. *FinTech*, 1(2), 191-205., hlm. 193.

⁴⁹ Cornelius, K. (2021). Betraying blockchain: accountability, transparency, and document standards for non-fungible tokens (nfts). *Information*, 12(9), 1-17., hlm. 13.

⁵⁰ Chang, A. J., El-Rayes, N., & Shi, J. (2022). Loc. Cit.

information in order to monitor customer transaction activities and report suspicious transactions.⁵¹ This is based on Bank Indonesia's order through Bank Indonesia Regulation No. 11/28/PBI/2009 on the Implementation of Anti-Money Laundering and Countering the Financing of Terrorism Programs for Commercial Banks. Through these regulations, Bank Indonesia aims to enhance the KYC principles while maintaining the existence of the original objectives regarding the spirit of anti-money laundering ("AML") and prevention of financing of terrorism ("CFT"). Article 2 paragraph (1) of the Bank Indonesia Regulation stipulates that: "*Banks are required to implement AML and CFT programs.*" Apart from that, taxation issues are also one of the problems caused by the anonymity feature of NFTs, cryptocurrencies have no operating jurisdiction plus the anonymity of NFT users' activity secrecy makes them forget about tax obligations.⁵² These phenomenon is due to the void in tax law and the absence of any consensus on how to tax cryptocurrency assets.⁵³ Whereas though the data shows the fantastic value of cryptocurrency activity in Indonesia throughout 2021, nearly 10 million crypto asset investors with a total transaction volume of Rp.478.5 trillion and it is a growth rate of 636 percent from 2020.⁵⁴

As explained above, the urgency of protecting personal data information in accordance with the provisions of positive law in Indonesia emphasizes more on the causal relationship, namely downstream regarding the impact that will occur in the future. Sectorally, confidentiality restrictions occur as long as it concerns the interests of the law and the state as regulated in Article 40 of the Banking Law. Where the head of Bank Indonesia can issue permits and written orders to each bank in order to provide information and information on the personal data of each customer to the Minister of Finance for tax purposes⁵⁵, and police, prosecutors or judges for judicial purposes in criminal cases.⁵⁶ On the other hand, the Personal Data Protection Draft Bill ("RUU PDP") also adheres to several important principles including the principle of extra-territorial jurisdiction as stipulated in article 2 of the RUU PDP, the principle of the right to be forgotten and the limitation of protection as stipulated in article 16 paragraph (1) of the RUU PDP. Extra-territorial jurisdiction as a principle that not only applies to every person, body and institution that performs legal acts in Indonesia, but also outside the jurisdiction of Indonesian law. The principle of the right to be forgotten regarding the right of every person to the erasure or deletion of their personal data.⁵⁷ Article 16 paragraph (1) of the RUU PDP excludes the protection of personal data for the interests of defense, security, law enforcement processes, and state administration.⁵⁸ However, it must be recognized that the legal protection of personal data in Indonesia is still regulated in sectoral and partial regulations.⁵⁹ The existence of these sectoral regulations must be recognized as still showing shortcomings in answering problems in accordance with current developments, as can be seen through the Regulation of the Minister of Communication and Information Technology Number 20 of 2016 concerning Personal Data Protection in Electronic Systems ("Perkominfo") which is one of the legal umbrellas related to the protection of personal data within the scope of electronic systems or the internet. Article 28

⁵¹ Bempah, F., Lanini, A., & Syachdin, S. Penerapan Prinsip Mengenal Nasabah (Know Your Customer Principles) Sebagai Upaya Pencegahan Tindak Pidana Pencucian Uang (Money Laundering) Pada Pt. Bank Rakyat Indonesia (Persero) Tbk Kantor Cabang Luwuk. *Tadulako Master Law Journal*, 6(2), 154-171., hlm. 156.

⁵² Wildan, A., Milah, M. S., Taufik, M., & Santika, T. (2022). Op. Cit., hlm. 78.

⁵³ Sukmariningsih, R. M., Nurudin, A., & Nursanty, E. (2022). Op. Cit., hlm. 1649.

⁵⁴ Olavia, L. (2022). *Sepanjang 2021, Ini Pencapaian Investasi Kripto di Indonesia*, <https://www.beritasatu.com/ekonomi/873895/sepanjang-2021-ini-pencapaian-investasi-kripto-di-indonesia>. Diakses 18 Agustus 2022.

⁵⁵ Pasal 41 ayat (1) Undang-Undang Nomor 10 Tahun 1998 tentang Perbankan

⁵⁶ Pasal 42 ayat (1) Undang-Undang Nomor 10 Tahun 1998 tentang Perbankan

⁵⁷ Ramadhani, S. A. (2022). Komparasi Perlindungan Data Pribadi di Indonesia dan Uni Eropa. *Jurnal Hukum Lex Generalis*, 3(1), 73-84., hlm. 81.

⁵⁸ Sinaga, E. M. C., & Putri, M. C. (2020). Formulasi Legislasi Perlindungan Data Pribadi dalam Revolusi Industri 4.0. *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional*, 9(2), 237-256., hlm. 253

⁵⁹ Priscyllia, F. (2019). Perlindungan Privasi Data Pribadi Perspektif Perbandingan Hukum. *Jatiswara*, 34(3), 239-249., hlm. 241.

letter d of the Perkominfo regulates the authority to protect personal data where there is a full transfer of authority to the electronic system organizer without describing in detail how the protection mechanism itself.

This is a form and a firm stance on the protection of personal data in Indonesia, both regulated in positive law and in the form of future draft laws, that protection and confidentiality should not be absolute but limited to certain things for the sake of greater interests. Unlike the concept of personal data protection on Blockchain, which actually hinders and does not provide access space for the interests of law and state administration. Moreover, a number of important variables of Blockchain lack legal standing and therefore have the potential to create a legal vacuum such as cryptocurrency as a medium of exchange in buying and selling NFT works and the processing and protection of personal data information.

2. Inventory Of Problems and Ius Constituendum Solutions in The Perspective Of Progressive Law

The ease and sophistication of NFT features, mechanisms, and infrastructure contained in the Blockchain system is like a double-edged knife phenomenon. On the one hand, it makes easier for users to buy and sell digital artworks. On the other hand, it is a collective series of snowballs that can cause misery. This can be seen with the existence of "combinations" such as anonymity features, personal data information protection mechanisms, works of art as its objects of sale and purchase, and most importantly the legal umbrella. These combinations exist in NFTs so as to make and create the NFT phenomenon as a new characteristic in the legal world which is termed the "nano characteristic", namely a much smaller scale to minimize obstacles in carrying out criminal acts, especially money laundering.⁶⁰

The anonymity feature of NFTs is at great risk of becoming a means to utilize money laundering practices, especially considering the background of artwork as the object of buying and selling activities in the NFT marketplace. The development of artworks (especially paintings) as an intermediary platform for some people and groups to channel the proceeds of criminal acts is undeniably a common secret. As Peter D. Hardy wrote in 2019 in the National Law Review which states that in fact works of art, especially paintings, are ideal instruments and vehicles for laundering money because of their easily transferable nature in privacy, concealment, prices that can be manipulated and valued subjectively, as well as the tax advantages offered by some countries.⁶¹ This practice often occurs in Indonesia, for example in the ASABRI corruption case, where one of the eight defendants spent the corruption proceeds by buying 36 paintings and then selling them in an exhibition.⁶²

Likewise, in the context of NFTs, malaise can occur with a considerable calculation of potential. There are factors related to the background of the desire to purchase paintings at NFTs, one of which can simply be examined with a study using the Unique Value Proposition ("UVP") marketing theory popularized by Alex Osterwalder.⁶³ UVP is a marketing technique that aims to associate variables or intersections between a product and potential buyers, simply put, it is the identification of X factors to be remembered by consumers and create demand.⁶⁴ Variables in UVP are a form of direct association to consumers by involving marketing communications related to the prospects of a product and service, namely by

⁶⁰ Sinurat, Y. C., Putranti, I. R., & Hanura, M. (2022). The Deception of Art: Analisis Potensi Ancaman NFTs (Non-Fungible Tokens) Terhadap Keamanan Nasional Indonesia. *Journal of International Relations*, 8(3), 280-288., hlm. 284.

⁶¹ Hardy, P.D. (2019). *Art and Money Laundering*, <https://www.natlawreview.com/article/art-and-money-laundering>. Diakses 20 Agustus 2022.

⁶² Subarkah, T. (2021). *Terdakwa Korupsi ASABRI Cuci Uang dengan Beli 36 Lukisan Berlapis Emas*, <https://mediaindonesia.com/politik-dan-hukum/426043/terdakwa-korupsi-asabri-cuci-uang-dengan-beli-36-lukisan-berlapis-emas>. Diakses 20 Agustus 2022.

⁶³ Irwandi, F. (2022). *Anomali Ghazali dan Sisi Gelap NFT* [Video]. Youtube. <https://www.youtube.com/watch?v=wwqFeaAiLml&t=502s>. Diakses 23 Agustus 2022.

⁶⁴ Srivastava, A. (2019). *Social Media: Marketing & Branding*. New Delhi: BPB Publications., hlm. 127.

mapping the internal values and specific problems faced by consumers.⁶⁵ Internal values such as each consumer's representation of the environment, culture, psychology, principles and morals and their correlation with speculation of future profits, opportunities and risks are the reasons behind a person's desire to purchase a product and service.⁶⁶

These desires are exactly the phenomenon that occurs with NFTs, as previously explained that NFTs offer many 'privileges' by eliminating the risks of accessing personal data, namely by providing anonymity features so that those who transact cannot be traced. In addition, there are internal values in the form of environment, culture and psychological influences that are affirmed by certain influencers or people on an NFT work.⁶⁷ Purchasers of digital artworks will get special access to certain communities which will ultimately affect the price increase of an NFT work. It is termed "pump and dump" or "menggoreng", just like the manipulation of the rise and fall of stock prices as prohibited in Article 91 and Article 92 of Law Number 8 of 1995 concerning Capital Markets as market manipulation.

But in the context of NFTs, these has not been regulated at all, even though the anonymity system has the potential to be used to commit various criminal acts such as fraud, money laundering, theft of personal data and even copyright plagiarism cases considering that the perpetrators of crimes will be very difficult to track. Data from Chainalysis noted that 110 money launderers collectively profited US\$ 8.9 million or around IDR 128 billion in 2021 through transactions by NFTs.⁶⁸ Then related to the issue of plagiarism of works is also one of the concerns of artists, as a case experienced by an NFT artist named G.Sujan that found his artwork duplicated and sold by a fake anonymous account on the NFT marketplace. Unfortunately, the act of duplication was without Sujan's permission and even the sales royalties that should have been his right as the creator were instead earned by a fake anonymous account that sold the work illegally.⁶⁹ The plagiarism issue in the NFT marketplace was further proven after OpenSea (one of the NFT marketplaces) issued a statement that as much as 80% of the artwork created through the free printer facility on its marketplace feature was the result of plagiarism, forgery, and misuse.⁷⁰ Furthermore, issues related to personal data are also something that is no less important considering the existence of personal data which is very crucial in today's modern stage of industrial revolution 4.0.⁷¹ At the end of June 2022, the world's largest NFT market OpenSea revealed that there was a personal data leaked that would potentially threaten millions of users, especially those who had connected their email data.⁷² The leaked email address data is used for economic motives as credential information in committing cybercrime acts such as phishing.⁷³

⁶⁵ Srivastava, A. (2019). Op. Cit., hlm. 133.

⁶⁶ Ibid

⁶⁷ Zanesty, R. A. R., Prakarsa, T. A. D., Alina, I. C., & Rakhmawati, N. A. (2022). Analisis Pengaruh Influencer Sosial Media Terhadap Keputusan Masyarakat Indonesia Dalam Pembelian Cryptocurrency. *Majalah Bisnis & IPTEK*, 15(1), 44-59., hlm. 58.

⁶⁸ Burhan, F.A. (2022). *Pelaku Pencucian Uang Lewat NFT Untung Ratusan Miliar Rupiah*, <https://katadata.co.id/desysetyowati/digital/61fcbcc0ad8a8/pelaku-pencucian-uang-lewat-nft-untung-ratusan-miliar-rupiah>. Diakses 21 Agustus 2022.

⁶⁹ Sinha, N. (2022). *The flip side of NFT art world: Theft and plagiarism*, <https://www.hindustantimes.com/lifestyle/art-culture/the-flip-side-of-nft-art-world-theft-and-plagiarism-101646458700163.html>. Diakses 24 Agustus 2022.

⁷⁰ Yuslianson. (2022). *80 Persen Konten NFT di OpenSea Karya Plagiat*, <https://www.liputan6.com/teknologi/read/4878649/80-persen-konten-nft-di-opensea-karya-plagiat>. Diakses 24 Agustus 2022.

⁷¹ Delpiero, M., Reynaldi, F. A., Ningdiah, I. U., & Muthmainnah, N. (2021). Analisis Yuridis Kebijakan Privasi dan Pertanggungjawaban Online Marketplace Dalam Perlindungan Data Pribadi Pengguna Pada Kasus Kebocoran Data. *Padjadjaran Law Review*, 9(1), 1-22., hlm. 3.

⁷² Glover, C. (2022). *NFT marketplace OpenSea reports massive data breach that could affect millions of users*, <https://techmonitor.ai/technology/cybersecurity/opensea-data-breach-nft>. Diakses 25 Agustus 2022.

⁷³ Whitney, L. (2022). *Data breach of NFT marketplace OpenSea may expose customers to phishing attacks*, <https://www.techrepublic.com/article/data-breach-nft-opensea/>. Diakses 25 Agustus 2022.

Looking at the issues of violations and the lack of a legal umbrella for NFTs in Indonesia, the qualifications of NFTs including features such as anonymity, decentralization, and digital nature further strengthen the initial premise that NFTs are a 'nano' technology in committing criminal acts. As well as the term money laundering method 5.0 introduced by the Head of the Financial Transaction Reports and Analysis Center (PPATK) Ivan Yustiavanda in a webinar entitled Opportunities, Challenges and Impacts of Utilizing New Tech in Strengthening the AML/CFT Regime, namely a new method of money laundering that operates in different jurisdictional spaces with gray instruments and less regulation.⁷⁴ Therefore, all stakeholders who are authorized in policy-making should jointly create a legal umbrella in order to deal with both material and non-material losses that have the potential to occur in the future, while utilizing the momentum of the RUU PDP which is currently in the process of being drafted.

Despite all the drawbacks of NFT, there is no deniable that the NFT innovation is something that can also bring benefits and convenience in an economic context. Therefore, the *ius constituendum* or future regulations should not necessarily turn a blind eye and focus on the negative. This is based on the existence of a common thread between technology and law, where both are tools to support the implementation of activities in human life.⁷⁵ However, in the era of the industrial revolution 4.0 and will lead to 5.0, disruptions and technological developments are moving very rapidly and it has even become a harsh reality that the law is always left behind by the rapid development of technology.⁷⁶ This is because the rationality of technology is always spontaneous, which is a form of human survival in facing every problem that exists in the hope of getting a better life (security and convenience) by using their thinking skills.⁷⁷ In accordance with Cicero's adage, "*ubi societas ibi ius*" which means where there is a society there is an accompanying law, where the initial form of law is an unwritten abstraction.⁷⁸ Where abstractions and laws are the result of community communication (between humans and humans) and humans and objects or nature.⁷⁹ So that the bitter reality should be accepted considering the nature of human beings as "imprisoned souls" so that "not ideal" according to Plato, then humans need to recognize the good and right (law)⁸⁰, and therefore, according to Satjipto Rahardjo, the paradigm of "human for law" should shift to "law for human".⁸¹ Given that law is the result of communication between people (society), it indicates that it is society that is present first before the law comes after it.

In the perspective of progressivity, this is something that is natural considering the history of the revolution in the development of law itself as the term "January revolution", namely the Dutch Supreme Court Decision which became a big stepping stone for the nature of law that is not only based on the law, but also must pay attention to morals and decency-justice in society.⁸² The truth is that the law is not merely a final dogma, but simultaneously

⁷⁴ CNN Indonesia. (2022). *PPATK Wanti-wanti Pencucian Uang 5.0: Dari NFT Sampai Kripto*, <https://www.cnnindonesia.com/ekonomi/20220223124620-78-762912/ppatk-wanti-wanti-pencucian-uang-50-dari-nft-sampai-kripto>. Diakses 25 Agustus 2022.

⁷⁵ Benuf, K., & Prasetyo, R. (2021). *Hukum Progresif Dan Teknologi Adalah Untuk Manusia. Juris Muda: Bunga Rampai Ilmu Hukum.*, hlm. 28.

⁷⁶ Loc, Cit., hlm. 27.

⁷⁷ Harahap, E. H. H. H., Istianingsih, N., & Latief, M. (2021). *Perkembangan Filsafat Ilmu Dalam Perspektif Teknologi Digital. Jurnal Administrasi Sosial dan Humaniora*, 4(1), 9-23., hlm. 13.

⁷⁸ Fuady, M. (2013). *Teori-Teori Besar (Grand Theory) Dalam Hukum*. Jakarta: Prenada Media., hlm. 50.

⁷⁹ Rhiti, H. (2011). *Filsafat Hukum Edisi Lengkap (Dari Klasik Sampai Postmodernisme)*. Yogyakarta: Universitas Atma Jaya Yogyakarta., hlm. 79.

⁸⁰ *Ibid.*, hlm. 75.

⁸¹ Arliman, L. (2019). *Mewujudkan Penegakan Hukum Yang Baik Di Negara Hukum Indonesia. Dialogia Iuridica: Jurnal Hukum Bisnis dan Investasi*, 11(1), 1-20., hlm. 8.

⁸² Rahardjo, S. (2009). *Hukum Progresif, Sebuah Sintesa Hukum Indonesia*. Yogyakarta: Genta Publishing., hlm. 61.

correlates and adapts according to the demands of the times.⁸³ Progressive law is the right answer and solution for the Indonesian in facing the rapid advancement of technology because of the progressive nature that is always responsive to times-changing and the character of progressive law itself is none other than for the welfare of mankind, so that it has implications for laws that will always process to become.⁸⁴

Reflecting on past failures, such as the Electrical Capacitance Volume Tomography and Electro-Capacitive Cancer Therapy innovations or known as anti-cancer vests invented by Dr. Warsito Taruno, these innovations were not facilitated by the Government through the Ministry of Health and tended to be without clarity. Even though the results of the innovation trial show hope, the numbers generated from a total of 3,183 users show that there are 1,530 people with cancer whose conditions have improved and 1,314 others feel that cancer growth has been inhibited.⁸⁵ This is the result of a legal paradigm that only relies on textual law, the unclear status of the anti-cancer vest at that time was solely due to the absence of derivative regulations related to medical device research from Article 38 of Law Number 36 of 2009 concerning Health. As a result, Dr. Warsito plans to continue his research abroad and has even provided training related to his research in Poland.⁸⁶ Therefore, it is time for legal reform to take place in Indonesia. The legal paradigm that has been struggling with textual law that denies aspects of justice and is shackled to the flow of formalist-positivism should change into a progressive legal paradigm, as expressed by Satjipto Rahardjo, that: "*the law is not absolutely driven by positive law or legislation, but must also move on non-formal law*".⁸⁷

In relation to the NFT context, legal drafting and regulation as well as the *ius constituendum* must be based on progressive laws so that NFT innovations are not eliminated solely because of rigid and textual laws. Reflecting on past cases and events, it is unfortunate that important innovations are eliminated by laws that are not progressive and responsive. This is considering the existence of NFT which more or less provides space and opportunities (business opportunities) for the Indonesian people themselves in terms of welfare both economically and socio-culturally through artworks in the form of NFT.⁸⁸ The progressive paradigm can be implemented on what the NFT lacks through a clear and responsive legal umbrella. Besides, regulation is not the only crucial thing in saving innovation. Apart from regulations that keep pace with the times, the law enforcement apparatus is also crucial. Good regulations will be useless if the practice of enforcement is only focused on written law (legality), especially in the context of innovation and technology, which actually always changes and moves faster than the law itself. So that the progressive paradigm must also be inherent in the body of law enforcement, especially when talking at the level of discretionary efforts. Discretion of law enforcers based on progressive legal thinking can provide ample space if law enforcers are faced with situations and cases where clear laws and rules of the game have not been regulated.⁸⁹

Regardless, attempting to regulate NFTs will be quite a chore due to the unclear jurisdiction with all its features and principles. EU countries, the United Kingdom, the United States, and neighboring countries such as Singapore also do not have specific regulations

⁸³ Ansori, L. (2018). Reformasi Penegakan Hukum Perspektif Hukum Progresif. *Jurnal Yuridis*, 4(2), 148-163., hlm. 149.

⁸⁴ Ravena, D. (2014). Wacana Konsep Hukum Progresif Dalam Penegakan Hukum Di Indonesia. *Jurnal Wawasan Yuridika*, 23(2), 155-166., hlm. 165.

⁸⁵ Utomo, A.P. (2016). *Bangsa Yang Mematikan Inovasi*, <https://www.republika.co.id/berita/o4f9s64/bangsa-yang-mematikan-inovasi>. Diakses 27 Agustus 2022.

⁸⁶ Sativa, R.L. (2016). *Februari: Rompi Antikanker Ciptaan Warsito Dianggap Belum Jelas Manfaatnya*, <https://health.detik.com/berita-detikhealth/d-3375862/februari-rompi-antikanker-ciptaan-warsito-dianggap-belum-jelas-manfaatnya>. Diakses 27 Agustus 2022.

⁸⁷ Rahardjo, S. (2009). Op. Cit., hlm. 10.

⁸⁸ Sari, D. P. (2022). Pemanfaatan NFT Sebagai Peluang Bisnis Pada Era Metaverse. *Jurnal Akrab Juara*, 7(1), 237-245., hlm. 244.

⁸⁹ Ansori, L. (2018). Op. Cit., hlm. 156.

related to NFTs until now⁹⁰. For example, the UK's regulation of NFTs is set out in the Money Laundering Regulations 2017. The UK's main focus is to regulate what they can anticipate rather than something that is out of their control, where there is the implementation of a digital asset detection system such as crypto if their citizens convert currency with crypto assets. The detection system will trigger a registration requirement similar to the banking mechanism (Know Your Customer) so that every NFT user's data in the UK can be known and tracked if something suspicious happens.⁹¹

The orientation of future NFT regulations in Indonesia should also focus on preventive mechanisms, strengthening upstream rather than downstream. In line with the concept of progressive law, technology and innovation will die in vain if the law and its enforcement are shackled by positivistic paradoxes because they do not adjust to the times and the state of society.⁹² A practical solution with regulations that focus on the upstream in the context of NFTs is to mitigate efforts, namely clarifying the anonymity features of NFTs specifically for NFT users in Indonesian jurisdictions. So that every NFT user from Indonesia can be detected and tracked for purposes of national interest such as matters of law violations related to money laundering, copyright infringement and personal data. The cutting-edge technology called Technological Protection Measure ("TPM"), which was introduced in the WIPO Internet Treaties, can be one of the solution, TPM is a prevention technology and a means of control in the field of copyright protection found on the internet by utilizing software encryption protection methods.⁹³ That kind of technology can also be used as a breakthrough for other areas such as personal data and other suspicious activities carried out by NFT users in Indonesia. Beside that, the government through and represented by the Minister of Communication and Information ("Menkominfo") can prepare software or mechanisms that are competent as "law enforcers" in cyberspace. Like the four panels that have been formed by the Minister of Communication and Information in an effort to handle crimes on the Internet, which include pornography, terrorism, SARA, illegal investment, gambling, drugs, fraud and intellectual property.⁹⁴

However, the four penal are not the best solution, because the handling orientation is repressive, namely by eradicating and taking action (blocking and removing the Domain Name System).⁹⁵ That is not in line and one vision with the ideals of progressive law, as it will only kill innovation, especially when talking in the context of NFT. It would be better if the handling is carried out against unscrupulous NFT users who commit violations and harm the country, not against the platform or service. In addition, the momentum of drafting the PDP Bill can be utilized by every policy-making stakeholder to think carefully about integrated regulations that will become the rules of the game for our country in facing the era of technological disruption.

CLOSING

NFT is a breakthrough technological innovation with various features and infrastructure that aims to facilitate each user in buying and selling art as well as investing. Apart from that, the existence of NFTs covers a global scale without any restrictions, so that in its development it is often considered to have no jurisdiction and there are many legal vacuum. In Indonesia, NFTs are not specifically regulated but there are several things to note such as cryptocurrencies that are not allowed to be considered as a medium of exchange and anonymity features that complicate law enforcement especially in terms of taxation, money

⁹⁰ Ossio, D.B., Cranston, J., Nixon, L., & Garcia, L.A. (2021). *Non-Fungible Tokens: The Global Legal Impact*. London: Clifford Chance., hlm. 8.

⁹¹ *Ibid.*, hlm. 4.

⁹² Ansori, L. (2018). Op. Cit., hlm. 155.

⁹³ Riswandi, B. A. (2017). *Pembatasan dan Pengecualian Hak Cipta di Era Digital*. Bandung : Citra Aditya Bakti., hlm. 7.

⁹⁴ Danuri, M. (2018). Model Deteksi Dan Pemblokiran Tindakan Amoral Pengguna Internet. *Jurnal Ilmiah Infokam*, 14(2), 89-93., hlm. 91.

⁹⁵ *Ibid.*

laundering, terrorism financing, personal data protection and potential copyright infringement. Therefore, regulation of NFT innovation is an urgency for Indonesia. However, regulation and law enforcement that is positivistic and only focused on textual law is not the best solution because it will only kill innovation itself. Progressive law is a solution because of its nature and character that always adapts to the times, morals, and justice that exist in society. NFT regulations can focus on upstream rather than downstream, namely mitigating and clearly regulating the anonymity feature so that every NFT user in Indonesia can be traced if something suspicious happens. The anonymity feature can be specifically prevented in Indonesian jurisdictions by utilizing cutting-edge technologies that can perform detection.

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